

**An Investigation into the Effect of Red Yeast Rice on Antibody Production by B  
Lymphocytes**

**An Honors Thesis (HONR 499)**

**By**

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*June 2018*

**Date of Graduation**

*May 2018*

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## **Abstract**

Red yeast rice has been used as a food supplement and traditional Chinese medicine for blood circulation. The fermentation process of red yeast rice by *Monascus purpureus* creates many metabolites including monacolin family members. One of these family members is monacolin K, otherwise known as lovastatin. Statins have been shown to be immunomodulatory apart from their ability to lower cholesterol. Due to the use of red yeast rice as an alternative to traditional statin drugs to lower cholesterol, the purpose of this study is to determine if red yeast rice also alters the immune response. The focus of this study was to determine if red yeast rice alters the production of antibody isotypes, IgM and IgG. Using the Enzyme-Linked ImmunoSorbant Assay (ELISA), red yeast rice suppressed lipopolysaccharide (LPS) induced IgM secretion, but not total IgG secretion. As far as IgG subtypes, red yeast rice reduced IgG1 secretion, but not IgG2c secretion. Overall, red yeast rice demonstrated an ability to alter the production of certain antibody isotypes.

## **Acknowledgments**

I would like to thank Dr. Heather Bruns for being a mentor for the past three years and an advisor on this project. I would not have learned the skills, techniques, or confidence for my research career without her. I would also like to thank the Honors College for their support, guidance, and for providing financial aid in the support of three semesters of Honors College Fellowship. Finally, I would also like to thank the ASPIRE Grant Program for the \$300 research grant that helped purchase reagents for this project.